Journal of Applied Health Sciences and Medicine
ISSN (Online): 2583-1887
www.jpub.org

Volume 2, Issue 2: 45 –53, 2022

Social Factors and Pattern of Blood Pressure Distribution among Academic Staff of Adekunle Ajasin University, Akungba- Akoko

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Received: 15.6.2022 • Accepted: 25.6.2022 • Published: 29.6.2022

Abstract: Aim: This study investigated the social factors and distribution pattern of blood pressure among the faculty of Adekunle Ajasin University, Akungba- Akoko (AAUA). Methods: It involved concurrently applying mixed quantitative and qualitative methods. The questionnaire and measurements of blood pressure and pulse rate were utilised as data collection instruments. The examined population includes the entire AAUA academic staff. Participants were selected for the study using multistage sampling procedures. In the first stage, five faculties of the university were chosen using a simple random sampling method. In the second stage, systematic sampling techniques were used to select participants for the study; a sample frame was comprised of academic staff from every fifth academic staff office at the selected faculties. Two instruments were used for data collection in this study. A self-designed questionnaire and an electronic sphygmomanometer were the instruments. Using the mean and standard deviation at a significance level of 0.05, the data were analyzed. Results: Findings on gender revealed that male staff displayed the highest blood pressure before examination (mean = 1.70), during examination (mean = 2.39) and after examination (mean = 1.79). On status the study further revealed academic staff at the level of a Reader exhibited the highest level of blood pressure before examination (mean = 2.00), during examination Readers (mean = 2.80) and after examination, Readers showed the highest level of blood pressure (mean = 2.00). Also on family type, the study also revealed that academic staffs who are polygamist displayed the highest blood pressure before examination (mean = 2.33), during examination (mean = 3.33) and after examination (mean = 2.33) than staff who are singles or monogamist. Conclusions: It is recommended that academic staffs are encouraged to devise comfortable means of harmonizing their professional and personal life so as to bring about healthy performance and avoidance of stress.

Keywords: Gender, Status, Family types, Academic staffs, Blood pressure pattern.

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1. Introduction

High blood pressure is a prevalent, treatable risk factor for cardiovascular disease, the leading cause of death in the world [1]. Indeed, up to three-quarters of the world's hypertensive population is projected to reside in developing nations by 2025 [2]. As the leading cause of morbidity and mortality in Sub-Saharan Africa, it is regarded as a significant public health concern [1]. In addition, there is evidence of a connection between work-related stress and cardiovascular issues [3].

Similarly, university employees are constantly exposed to high levels of psychological stress, which can lead to long-term psychological problems like excessive anger, anxiety, irritation, and dissatisfaction [4] [5].

[6] Previously identified cardiovascular risks among university workers as a result of excessive responsibilities. In Nigeria universities, as at today there are shortage of academic staff, in other words one lecturer is overloaded with a lot of responsibilities that should be shared among three individuals. Lecturers' duties include community service, administration, research, and teaching. Additionally, according to [6] findings, teaching staff have a higher prevalence of hypertension than non-teaching staff. It was reported that a high level of psychological stress during certain occupational activities (public speeches like lectures in class and at meetings and seminars) contributes to blood pressure increase among certain professionals predominantly those with high intellectual activity like high institution lecturers [7][8]. According to [6], stress can lead to hypertension by frequently raising blood pressure and stimulating the neurological system to produce large amounts of vasoconstricting hormones, which raise blood pressure.

Additionally, the impact on blood pressure increases when one risk factor is added to other stressors.

White coat hypertension, job strain, race, social context, and mental anguish are some of the elements that affect blood pressure through stress.

In the field of industrial-organizational psychology, work stress is considered as a reaction to stimuli in a job that leads to negative consequences to the people who are exposed to them [9].

Lecturing and mentoring students, producing papers and presentations for both class lectures and research conferences, and adhering to the needs of one's university or department are just a few of the academic functions of university teachers. They also have to cope with responsibilities outside of the classroom, such as their family, social lives, and other obligations.

Many university lecturers are stressed out as a result of their various roles and responsibilities, intense demands, and high expectations placed on them. They have demonstrated specific stress responses such as increased turnover intention, decreased job performance, decreased job satisfaction, increased anxiety, and increased depression. [10][11][12].

Several studies have found that several factors influence the stress levels of university lecturers. Work overload [13][14], work-life balance [15][16], and other demographic and education-related factors like gender [17], academic ranks [17][18], age [19][20], and years of teaching experience [20][21] all contribute to their stress levels.

In a sample of 55 lecturers from West Visayas State University-Janiuay Campus, [18] discovered a significant difference in stress levels for academic rank, but no significant differences for age, gender, civil status, or number of academic units.

Various exposures to diseases such as high blood pressure may be caused by differences in work descriptions and responsibilities. Presently, there is dearth of studies among academic staff of Adekunle Ajasin University.

- There will be no significant differences between the pattern of blood pressure distribution among Adekunle Ajasin University academic staff before, during and after conducting examination.
- Gender has no significant relationship with the pattern of blood pressure changes caused by exam stress among academic Adekunle Ajasin University staff.
- Status will not have any significant relationship with the pattern blood pressure changes caused by exam stress in academic Adekunle Ajasin University staffs.
- Family type will not have any significant relationship with the pattern of blood pressure changes due to examination stress among academic Adekunle Ajasin University staffs.

2. Methods

In this study, a survey-based descriptive research design was employed. With this approach, a subject's behavior is observed, described, and not at all influenced. It entails gathering information about events, which is then arranged, tabulated, represented, and explained. Additionally, it organizes the results so that explanations can be tested or validated against the findings. All of the academic staff at Adekunle Ajasin University in Akungba Akoko made up the study's population. The study's participants were chosen using multistage sampling techniques. Five university faculties were chosen using a simple random sampling technique in stage one. Academic staffs in every fifth academic staff offices from the chosen faculties were chosen as the sample frame in stage two, which involved systematic sampling techniques. The sample size for this study consisted of a total of fifty (50) participants. Information for this study was gathered using two different tools. The tools include a self-made questionnaire and an electronic sphygmomanometer for taking the participants' blood pressure. The survey asked about the respondents' age, gender, and length of employment as well as their alcohol consumption habits, which were categorized into don't take, occasionally, moderately, and a lot for the academic staff at Adekunle Ajasin University Akungba-Akoko (AAUA).

Also, blood pressure pattern values in millimeter Mercury (mmHg) before, during and after examination was measured with a sphygmomanometer and recorded. The pattern of blood pressure distribution is determined under the categories stated below:

Normal - lower than 120 mmHg

Elevated - 120 - 129/80 mmHg

Stage 1 Hypertension (HBP 1) - 130/80 - 139/89 mmHg

Stage 2 High Blood Pressure (HBP 2) - 140/90 mmHg or greater.

The items in the self-constructed questionnaire were carefully reviewed and submitted to experts in the relevant field for their review of the instrument; the researcher then meticulously adjusted the experts' comments and corrections. In addition, the sphygmomanometer was calibrated to ensure its usability. To determine the reliability of the instrument a test retest technique of two weeks intervals was employed. This was administered on 5 randomly selected respondents from the target population. These respondents were excluded from the main study. A reliability of 0.89 was obtained using Pearson Product Moment Correlation Coefficient and was considered adequate for the study. Alpha was set at 0.05**.**

The survey was conducted within a semester of 4 months duration. The first administration of the instrument occurred one month before examination since there were not many academic activities

going on. The examination period was a 14-days written exam while two weeks after the examination, another data was retrieved and recorded. The instruments were administered by the researcher and two trained researcher assistants with a 100% guarantee of keeping their information confidential. The administration of the instrument was done in each selected faculty at intervals before, during and weeks after examination. All the questionnaire forms which also contain the information about the blood pressure patterns of the individual participants were distributed retrieved and screened after the last administration. After allowing the respondent to rest for about five minutes, the blood pressure was rechecked; the average scores were thereafter recorded. This was repeated when the respondent completed the filling of the questionnaires.

The IBM SPSS version 25 was used for the statistical analysis of this study. Frequency counts and percentages were used to describe participants' information and blood pressure changes due to examination stress. On the other hand, ANOVA was used to test the hypothesis at 0.05 alpha levels.

3. Results

3.1. Statistical analysis

H_O1: There will be no significant relationship between examination stress and pattern of blood pressure among Adekunle Ajasin University academic staff.

Table 1. showing relationship between examination stress and pattern of blood pressure

Variables	Mean	Std. Deviation	N	Sig	r
EXAMINATION_STRESS	1.26	.600	50	.103	.233
Pattern	5.4400	2.08160	50		

Table 1 showed that there is no significant relationship between examination stress and pattern of blood pressure P > 0.05. However, there is a positive correlation (r = 0.233) between examination stress and pattern of blood pressure. That is, whenever there is an increase in examination stress, there is also an increase in the pattern of blood pressure. Academic staff at Adekunle Ajasin University will not exhibit a significant gender difference in their blood pressure response to examination stress.

Table 2. showing relationship between the patterns of blood pressure changes due to examination stress based on Gender

GENDER		N	Mean	Std. Deviation		Sum of Squares	df	Mean Square	F	Sig.
average B.P measurement before examination	MALE	33	1.70	.637	Between Groups	.913	1	.913	2.295	.136
	FEMALE	17	1.41	.618	Within Groups	19.087	48	.398		
	Total	50	1.60	.639	Total	20.000	49			

average B.P measurement during examination	MALE	33	2.39	.864	Between Groups	5.312	1	5.312	6.816	.012
	FEMALE	17	1.71	.920	Within Groups	37.408	48	.779		
	Total	50	2.16	.934	Total	42.720	49			
average B.P measurement after examination	MALE	33	1.79	.650	Between Groups	1.130	1	1.130	2.493	.121
	FEMALE	17	1.47	.717	Within Groups	21.750	48	.453		
	Total	50	1.68	.683	Total	22.880	49			

Table 2 revealed that there is no significant difference in the pattern of blood pressure before; F (1, 48) = 2.295, P > 0.05 and after examination; F (1, 48) = 2.493, P > 0.05, based on their Gender. However, there is a significant difference in the pattern of blood pressure during examination; F (1, 48) = 6.816, P < 0.05 based on their Gender differences. The table further revealed that male staff displayed the highest blood pressure before examination (mean = 1.70), during examination (mean = 2.39) and after examination (mean = 1.79). This is to say that, Adekunle Ajasin University Akungba Akoko, Academic male staff have the tendency of having raised blood pressure than their female counterparts whether before, during or after examination. H_0 3:Status will have no significant relationship between the patterns of blood pressure changes due to examination stress among Adekunle Ajasin University academic staff

Table 3. showing relationship between the patterns of blood pressure changes due to examination stress based on Status

STATUS		N	Mean	Std. Deviation		Sum of Squares	Df	Mean Square	F	Sig.
average B.P measurement before examination	Reader	5	2.00	.707					1.121	.363
	Senior lecturer	5	1.40	.548						
	Lecturer 1	18	1.56	.616						
	Lecturer 2	3	1.00	.000	Between Groups	2.260	5	.452		
	Assistant lecturer	7	1.71	.756	Within Groups	17.740	44	.403		
	Graduate assistant	12	1.67	.651	Total	20.000	49			
	Total	50	1.60	.639						
average B.P measurement during examination	Reader	5	2.80	1.095						
	Senior lecturer	5	2.40	.894	Between Groups	6.053	5	1.211		
	Lecturer 1	18	2.33	.840	Within Groups	36.667	44	.833		
	Lecturer 2	3	2.00	.000	Total	42.720	49			

	Assistant lecturer	7	2.00	1.000					1.453	.225
	Graduate assistant	12	1.67	.985						
	Total	50	2.16	.934						
average B.P measurement after examination	Reader	5	2.00	.707						
	Senior lecturer	5	1.60	.548	Between Groups	1.057	5	.211		
	Lecturer 1	18	1.72	.752						
	Lecturer 2	3	1.33	.577	Within Groups	21.823	44	.496	.426	.828
	Assistant lecturer	7	1.71	.756	Total					
	Graduate assistant	12	1.58	.669						
	Total	50	1.68	.683						

Table 3 showed that there is no significant difference in the pattern of blood pressure before; F (5, 45) = 1.121, P > 0.05, during F (5, 45) = 1.453, P > 0.05 and after examination; F (5, 45) = 0.426, P > 0.05, based on the respondents status. Hence, the null hypothesis is accepted. The table further revealed academic staff at the level of a Reader exhibited the highest level of blood pressure before examination (mean = 2.00), followed by Assistant Lecturers (mean = 1.71), Graduate Assistant (mean = 1.67), Lecturer I (mean = 1.56), Senior Lecturer (mean = 1.40), while Lecturer II (mean = 1.00) has the lowest level of blood pressure before examination. During examination Readers showed the highest level of blood pressure (mean = 2.80), followed by Senior Lecturer (mean = 2.40), Lecturer I (mean = 2.33), Lecturer II (mean = 2.00), Assistant Lecturers, (mean = 2.00) while Graduate Assistants (mean = 1.67), has the lowest level of blood pressure during examination. After examination, Readers showed the highest level of blood pressure (mean = 2.00), followed by Lecturer I (mean = 1.72), Assistant Lecturers, (mean = 1.71), Senior Lecturers (mean = 1.60), Graduate Assistants (mean = 1.58), while the lowest level of blood pressure after examination is showed among staff in the Lecturer II cadre (mean = 1.33). This is to say that, Adekunle Ajasin University Akungba Akoko, Academic staff who are at the cadre of Readers have the propensity of having increased blood pressure than academic staff of lower other cadres whether before, during or after examination.

$H_0$4: Family type will have no significant relationship between the patterns of blood pressure changes due to examination stress among Adekunle Ajasin University academic staff.

Table 4. showing relationship between the patterns of blood pressure changes due to examination stress based on Family type

FAMILY TYPE		N	Mean	Std. Deviation		Sum of Squares	df	Mean Square	F	Sig.
average B.P measurement before examination	MONOGAMY	45	1.56	.624	Between Groups	1.722	2	.861		
	POLYGAMY	3	2.33	.577	Within Groups	18.278	47	.389		

	SINGLE	2	1.50	.707	Total	20.000	49		2.214	.121
	Total	50	1.60	.639						
average B.P measurement during examination	MONOGAMY	45	2.13	.894	Between Groups	6.853	2	3.427	4.490	.016
	POLYGAMY	3	3.33	.577	Within Groups	35.867	47	.763		
	SINGLE	2	1.00	.000	Total	42.720	49			
	Total	50	2.16	.934						
average B.P measurement after examination	MONOGAMY	45	1.67	.674	Between Groups	2.213	2	1.107	2.517	.092
	POLYGAMY	3	2.33	.577	Within Groups	20.667	47	.440		
	SINGLE	2	1.00	.000	Total	22.880	49			
	Total	50	1.68	.683						

Table 4 revealed that there is no significant difference in the pattern of blood pressure before; F (2, 47) = 2.214, P > 0.05 and after examination; F (2, 47) = 2.517, P > 0.05, based on their Family type. However, there is a significant difference in the pattern of blood pressure during examination; F (2, 47) = 4.490, P < 0.05. The table further revealed that staff who are polygamist displayed the highest blood pressure before examination (mean = 2.33), during examination (mean = 3.33) and after examination (mean = 2.33) than staff who are singles or monogamist. This is to say that, Adekunle Ajasin University Akungba Akoko, Academic staff who are Polygamist have the predisposition of having increased blood pressure than those who are singles or monogamists whether before, during or after examination.

4. Discussion

The results shown that Adekunle Ajasin University Akungba Akoko, Academic male staff have the tendency of having raised blood pressure than their female counterparts whether before, during or after examination. This finding supported the study of [19] [17], and [18] which revealed that other demographic and education-related factors such as gender also contribute to their stress levels.

The results shown that Adekunle Ajasin University Akungba Akoko, Academic staff who are at the cadre of Readers have the propensity of having increased blood pressure than academic staff of lower other cadres whether before, during or after examination. The findings was in line with the finding of 18] which stated that academic ranks contribute to academic staffs stress level.

The result also revealed that Adekunle Ajasin University Akungba Akoko, Academic staff who are Polygamist have the predisposition of having increased blood pressure than those who are singles or monogamists whether before, during or after examination.

5. Conclusion

Gender, status and family type have a significant relationship with the pattern of blood pressure changes due to examination stress among academic Adekunle Ajasin University staff. Based on the

findings of this study, the following recommendations are made: Academic staffs are encouraged to devise comfortable means of harmonizing their professional and personal life so as to bring about healthy performance and avoidance of stress. The school management should embark on public enlightenment through health education as regards stress coping strategies among academic staff in universities. Academic staff should be encouraged to live healthy lifestyles which include eating healthy food and regular exercise in order to enable them cope with the stress that comes with their daily work activities.

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